Strategies for coupled ice sheet and climate modeling

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Ice sheets are strongly coupled to the climate system, as shown by observations of ongoing ice sheet decay and records of past climates. However, very few studies exist with coupled ice sheet and global climate models. These studies use different modeling strategies than uncoupled studies regarding model initialization, treatment of climate model biases, or uncertainty quantification. Here we review current practices in coupled modeling and discuss the usefulness of coupled versus uncoupled studies.